

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Our Case No. 10841US06)

In The Application Of:

ISEBERG ET AL.

Serial No.: 09/489,441

Filed: January 21, 2000

Patent No. 5,887,070

Issued: March 23, 1999

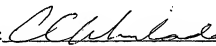
Examiner: H. Le

Group Art Unit: 2643

For: HIGH FIDELITY INSERT
EARPHONES AND METHOD OF
MAKING SAME

CERTIFICATE OF TRANSMISSION
VIA FACSIMILE

I hereby certify that this correspondence is
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(703) 308-6306) to the Assistant
Commissioner for Patents, Washington,
D.C. 20231 on JANUARY 3, 2002

By: 
Christopher C. Winslade
Reg. No. 36,308

DECLARATION OF MEAD C. KILLION

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

I, Mead C. Killion, hereby declare as follows:

(1) I am the inventor in U.S. Patent No. 4,677,679 cited by the Examiner in the above-identified case. I am also the President and a founder of Etymotic Research, Inc. ("Etymotic"), the assignee of the above-identified patent application and of U.S. Patent No. 4,677,679. As part of its business, Etymotic designs and manufactures insert earphones, as well as microphones for hearing aid applications. I personally have thirty-nine (39) years experience in designing earphones for various applications and in designing microphones for hearing aid and other applications. I have

been a named inventor in approximately thirty-seven (37) pending and issued patent applications in the auditory field, have published sixty (60) papers in the auditory field, and have given invited lectures on various auditory topics in 18 countries around the world. I was recently awarded an honorary Doctor of Science degree by Wabash College for my contributions to the auditory field.

(2) I believe that I am a person of at least ordinary skill in the art of insert earphones for various applications and in the art of microphones for hearing aid applications.

(3) I have reviewed the outstanding rejections in the August 28, 2001 Office Action, as well as the McCabe reference (U.S. Patent 3,671,685), the Miyahra et al. reference (U.S. Patent No. 4,447,677), and my own U.S. Patent No. 4,677,679 cited by the Examiner. I submit that a person of ordinary skill in the art would not combine these references as the Examiner has done. Specifically, for example, the McCabe reference discloses a headset system that is typically used in aircraft cabins and is plugged into a console of a seat, and is not the type of device that would be plugged into a CD player to listen to high fidelity audio. McCabe teaches that sound conducting tubes 1a and 1b are used for the transmission of low frequency (up to 5000 to 6000 Hz) sound waves received directly from a fixed transmission system in the aircraft, while a transducer 5 is used to transduce electrical signals representative of high frequency (above 5000 to 6000 Hz) sound waves received from the fixed transmission system (see, for example, column 3, lines 27-35). In other words, McCabe teaches that the sound tubes do not sufficiently transmit high frequencies, and that the transducer does not sufficiently generate low frequencies, and therefore a combination of sound tubes (for lows) and a transducer (for highs) should be used. There is no teaching in McCabe (or in Miyahra et al. and Killion) as to how the McCabe device could be combined with Miyahra et al. and Killion, both of which do not disclose such a combination of sound tubes and a transducer.

Accordingly, a person of ordinary skill in the art would not look to the combined teachings of the McCabe, Miyahra et al. and Killion references in attempting to achieve a high fidelity response from an insert earphone.

(4) I submit that the Miyahra et al. reference does not disclose a “damper.” Instead, the Miyahra et al. reference discloses a “dust proofing sponge element” 58. I am familiar with this type of element, and it does not provide damping of the frequency response. In fact, it has virtually no effect on the frequency response, and therefore cannot be considered a damper. Instead, its purpose is to prevent external debris, such as dust or ear-wax, from entering and clogging the transducer. This is consistent with the discussion at column 4, lines 40-43 in Miyahra et al.

(5) I submit that the combination of the teachings of McCabe, Miyahra et al. and the network circuit of Killion (Figure 4) does not result in an insert earphone that provides a high fidelity response. Specifically, I created a computer model of a device that corresponds to the Miyahra et al. device and that employs the network circuit of Killion. For purposes of determining a frequency response for the combination, the components of McCabe listed and relied upon by the Examiner in the Office Action do not add anything useful to Miyahra et al. In generating the computer model, I assumed that the distance across the uncompressed ear plug 11 of Miyahra et al. is approximately 8.75 mm, as is typical in such devices. I also assumed that the ear plug 11 is compressed approximately 15% to 7.5 millimeters, which corresponds to the average size of an ear canal, when inserted into the ear canal. The model was also based on the use of a typical transducer for such applications. Attached as Exhibit 1 to this Declaration is a frequency response curve generated by such computer model. As can be seen from Exhibit 1, the response generated is not a high fidelity response. Accordingly, the combination of the teachings of McCabe, Miyahra et al.

and the network circuit of Killion (Figure 4) does not result in an insert earphone that provides a high fidelity response.

(6) In all of my years of experience in the insert earphone field, I have never come across a document or a device that teaches or achieves an insert earphone that provides a high fidelity response, until the invention set forth in the above-identified patent application.

(7) I declare under penalty of perjury that the foregoing is true and correct.

Executed on Jan 2, 2002
Date

Mead C. Killion
Mead C. Killion

Serial No. 09/489,441
Iseberg et al.
Exhibit 1 to Declaration of Mead C. Killion

